



Executive Summary

Proposal

In June 2002, Madison Gas and Electric Company (MGE); MGE Power LLC (MGE Power), a non-utility affiliate; and MGE Energy, Inc. (MGE Energy), a holding company, applied to the Public Service Commission of Wisconsin (Commission or PSC) for a Certificate of Public Convenience and Necessity (CPCN) under Wis. Stat. § 196.491(3) and Wis. Admin. Code ch. PSC 111, and for any additional approvals required from the Commission to construct and operate a large electric power generating facility under Wisconsin's leased generation law, Wis. Stat. § 196.52(9). Supplements to the application were filed during August through October, and the Commission determined the application to be complete on October 21, 2002. Subsequently, MGE Power West Campus LLC (West Campus), another non-utility affiliate, was created as a wholly owned subsidiary of MGE Power.

The facility is expected to be a cogeneration facility located on the campus of the University of Wisconsin-Madison (UW). It would be capable of providing a nominal 150 megawatts (MW) of electric power, plus 500,000 pounds per hour of steam and 20,000 tons of chilled water capacity. It would be fueled primarily by natural gas with ultra-low sulfur distillate fuel (0.003 percent sulfur) serving as a backup fuel. Chilled water would be provided from electric motor-driven chillers. The UW uses steam and chilled water primarily for heating and air conditioning on the Madison campus. The entire facility is referred to as the West Campus Cogeneration Facility (WCCF).

The developer must obtain several approvals and permits from the Wisconsin Department of Natural Resources (DNR). The primary DNR approval needed before power plant construction may begin is the construction permit for a new source emitting significant quantities of air pollutants. The most critical water actions at this time are a water withdrawal registration and a water loss approval.

Location

The project site is located adjacent to and north of the existing UW West Campus Heating Plant located on the 500 block of Walnut Street in Madison, on the UW campus. The site occupies approximately 4.5 acres and is currently used for agricultural crop research.

The WCCF would qualify as a cogeneration plant according to the engineering and efficiency standards in federal law, 18 CFR § 292.205, as referenced in Wis. Admin. Code § PSC 111.53(2)(b). MGE has

proposed that its compliance with PSC 111 be met by providing two alternative plant configurations on the same site rather than two alternative locations.

The location for the proposed site is based on decisions made by the Wisconsin Department of Administration (DOA) Division of Facilities Development (DFD). All real property held by the UW System's Board of Regents is under the control of the DFD and the Wisconsin Building Commission. It appears that the proposed site was identified by MGE because it was previously identified as the location for expansion of utility facilities on the UW campus and reserved for utility use in the UW's current Madison Campus Master Plan.

The DFD has indicated that, although it would normally prepare an environmental assessment or an environmental impact statement for siting a project such as the WCCF, it did not in this case. Instead, it deferred WEPA compliance to MGE's CPCN application review. However, because the UW Board of Regents has already approved the project, and the Building Commission, which controls the site, has already authorized construction of the WCCF at this location only (in May 2002), the Commission does not have alternative sites to consider in this docket.

Ownership

West Campus would pay rent to the UW, provide backup electric service to the UW campus from the facility, and provide station service from the electric generators in the facility to the state-owned chillers that would be located in the facility. West Campus would own assets within the facility that comprise a complete facility for the generation of electricity under the leased generation law. The state of Wisconsin would own the remainder of the facility. West Campus would lease its owned interest in the facility and sublease its interest in the facility site to MGE. MGE would operate the electric generation facility for the benefit of its ratepayers and the remainder of the facility, consisting of steam and chilled water assets, for the benefit of the state under an Operation and Maintenance Agreement with the state.

Project Description

Plant capacity and efficiency

The electric generating plant would be operated primarily in intermediate load mode. Actual operation would depend on market conditions for electricity, the market price for natural gas, UW steam needs, and UW chilled water needs. Capacity factors would be 40 to 60 percent but could vary more than that. The facility would have an operational life of at least 40 years.

The plant is configured with two combustion turbines (CTs), two heat recovery steam generators (HRSGs), duct firing, and a single steam turbine, for a nominal facility rating of 150 MW. Output with no duct firing, chiller operation, or steam delivery is designed at 115 MW. Maximum output would be up to 169 MW and would occur in winter. The steam turbine output would depend on the steam needs of the UW. The exhaust steam would be sent to a condenser and cooled by cooling towers. This process would form water that would then be reused. Electric-driven chillers would use additional

roof-mounted cooling towers for heat rejection. The plant would also be designed to accommodate 30,000 additional tons of future chilling capacity.

When providing steam to the UW, this proposed plant would have a higher overall thermal efficiency than a combined-cycle plant without cogeneration. Overall efficiencies of up to 70 percent are expected. The overall efficiency of the WCCF without cogeneration would be expected to be between 40 and 50 percent.

Steam to UW

Steam would be provided to the UW system through existing steam lines on the campus. Each HRSG in the plant would be able to produce 125,000 pounds per hour, with an additional 125,000 pounds per hour produced when each duct burner was placed in operation. Condensate return from the UW would be recycled back to the plant's condenser.

Chilled water to UW

Chilled water would be provided to the UW campus at 40°F and returned to the plant at approximately 50°F. Delivery to the UW would be through a connection to the existing UW-Madison pipeline network. The current cooling capacity design requires four, 5000-ton electric chillers with a peak demand of 17 MW of electric power. Water for the chiller condensers would be sent to the chilled water cooling towers.

Electricity to MGE

The electrical power output of the three generators would be stepped up from 13.8 kV to 69 kV. Three, 550-foot, 69-kV lines would connect to the existing adjacent Walnut Street Substation and the electric transmission system via solid dielectric, underground cables. Three new 69-kV generation step-up transformers would be needed in the Walnut Street Substation, and the substation would need to be modified to accept them.

American Transmission Company (ATC) has applied to the Commission for a Certificate of Authority (CA) for a second East Campus-Walnut Street 69-kV underground cable. This second transmission line from East Campus is already needed for local transmission system reliability. Planning for the WCCF accelerates ATC's application timetable for this line.

Fuel

MGE would extend its own existing high-pressure, 12-inch gas main along Walnut Street and Herrick Drive to deliver natural gas to the site. It would require a trench in or adjacent to the streets from the adjacent heating plant. MGE's distribution system is connected to ANR Pipeline Company and Northern Natural Gas Company, allowing gas supplies to be obtained from the Chicago Hub, the Gulf Coast, the mid-continent supply basins, and from Canada. MGE plans to supply the WCCF with a combination of firm and interruptible pipeline service. The remainder of the plant's fuel needs would be met with the back-up distillate fuel oil, which would be stored on site in a 495,000-gallon tank.

Water

The applicant could utilize groundwater for the entire process, as purchased from the Madison Water Utility (MWU), but a hybrid operation where surface water from Lake Mendota would be utilized for cooling is more likely. The MWU water would be supplied to the WCCF from an existing water main located next to the project on Herrick Drive and a new well across the Walnut Street-Observatory Drive intersection from the WCCF. Surface water would be supplied from the UW's existing Lake Mendota intake structure off Park Street and the campus shoreline. An 18-inch supply line that runs along the Lakeshore Path could be utilized for a short distance. A new supply line for the WCCF would be constructed from the site to the existing 18-inch line near Charter Street.

For both plant configurations, the water use at the proposed facility would be, on average, approximately 1.2 million gallons per day (MGD) for all groundwater use and 1.04 MGD for hybrid water use. The estimated maximum usage is approximately 3.53 MGD. Over 80 percent of the water required would be used in the cooling towers, through which most of the water would be evaporated. Mitigation of this water loss would be required through the DNR water loss approval, and, depending on the mitigation alternatives selected, MGE would probably be responsible for at least some of the costs.

Up to 0.27 MGD from the chiller cooling towers blowdown and up to 0.39 MGD from the circulation water cooling towers blowdown would be discharged to the Madison Metropolitan Sewerage District (MMSD) sewer connection at a lift station near the UW Veterinary School building. Sanitary waste water would be discharged to the same MMSD connection. Storm sewer discharge would go into nearby Willow Creek and into Lake Mendota.

Solid waste

All solid waste would be removed from the WCCF site by licensed private contractors in accordance with applicable regulatory requirements and disposed of at either local or regional licensed facilities.

Need for the Project

Electric demand and capacity

MGE is forecasting its peak demand to grow faster than its energy use from 2002 through 2011. The peak demand would grow by less than 3 percent per year from 2002-2005 and by 2.0 percent per year or less through 2020. Commission staff prepared an alternative forecast that shows consistently lower percentage increases in peak demand and in energy from 2005 onward.

For planning future needs, the PSC requires MGE to maintain at least an 18 percent planning reserve requirement. MGE's peak demand has varied from 450 MW to 720 MW. Available MGE-owned capacity at peak in 2002 was 647 MW. An additional 100 MW was contracted from a merchant plant, and 90 MW was purchased without reserves. The total of 837 MW with purchases resulted in a 20.3 percent reserve margin for MGE in 2002. MGE's ability to serve its territory is adequate at this time because it has enough purchased power contracted. However, without some electric generation, capacity expansion would degrade.

Steam and chilled water demand and capacity

The current forecast is for the UW chilling and steam production capacities to fall short in 2004, just prior to the time when the WCCF would come on line. The WCCF would provide the necessary chilling and steam production capacity through 2011.

Potential Effect on Competition

With the 150-MW WCCF, MGE Energy would own or control 883 MW of capacity in Wisconsin. This constitutes about 7 percent of total electric generating capacity in the Wisconsin and Upper Michigan System. This is too small an amount of generating capacity for MGE Energy to adversely affect wholesale electricity prices.

Project Cost

The capital cost for the entire plant would be \$178.5 million. MGE would pay \$99.2 million for the electrical and most of the thermal systems, and the UW would pay \$79.3 million for the chilled water and steam portions and a portion of the thermal systems. Under the proposed facility lease, MGE would pay an additional \$10.5 million for the relocation of a greenhouse, debt financing, capitalizing the ground lease, water mitigation, environmental and community impact mitigation, and a general contractor fee to fix the project construction cost to ratepayers. This means that the principal amount of the project to be placed in the facility lease to be paid by ratepayers would be \$109.7 million.

Costs estimated by MGE are broken into fixed or variable operations and maintenance (O&M). Fixed O&M costs are estimated at \$13.50/kW-year. Variable O&M costs are estimated at \$0.75/MWH. These costs are in 2002 dollars and are comparable with other generation units. An allocation of operating costs would incorporate an incentive for the UW to take steam from the facility, thus also lowering the cost of generating electricity.

The project cost to be used in the facility lease is currently estimated at \$109,716,000. This value reflects that part of the total project cost allocated to electric generation including: project engineering, equipment and construction costs; and expected inflation. Based on the financial terms in MGE's proposed facility lease (discussed in Chapter 3), MGE's electric ratepayers would be responsible for annual lease payments of about \$16 million, reflecting capital costs alone. Consequently, MGE's retail electric rates could increase around 4 percent if the capital costs being recovered from the facility lease were proportionately spread across all rate paying customer classes and MGE as a result of the project would be able to reduce certain capacity purchases from present independent power producers. For a residential customer presently paying about \$40 per month for retail electric service, the rate increase due to the plant would be about \$1.60 per month. This amount could be further reduced by about 12 percent if, instead of the proposed facility lease, traditional rate-making was used.

Project Alternatives

Energy efficiency

MGE has been achieving about 5 MW of savings per year from its energy efficiency services and estimates achieving an additional 6 MW between now and 2004. These savings of 43 MW are reflected in the applicant's forecast. Even if the analysis performed by the applicant underestimates the cost-effective energy efficiency potential still available, there is not likely to be sufficient additional savings available to substitute for the applicant's proposed facility.

Renewable resources

MGE and Commission staff each used EGEAS modeling to compare renewable resource and other energy alternatives to the WCCF. Solar, wind, and biomass options were examined in competition with other natural gas options and the use of coal. The biomass option that was examined was a biomass-gasification, combined-cycle technology, which appears to be the most economical, feasible, and environmentally sound at this time. The different renewable resources did not prove competitive individually with the WCCF but, except for the low fuel cost scenario, the model selected more wind energy over the next few decades.

Other alternative technologies

In addition to renewable energy options, MGE and Commission staff also included other generation options in the EGEAS modeling. One was the purchase of portions of the proposed Power The Future coal units in Oak Creek (both the proposed supercritical pulverized coal units and the proposed integrated coal gasification combined-cycle unit), assuming both to be financed via a leased generation package.¹ MGE also included a proxy independent power producer (IPP) combined-cycle plant. Also included were a distributed generation option to be financed as a rate base project and small amounts of firm purchases that would be made available early in the expansion period.

The WCCF, in the EGEAS modeling, is in a virtual tie for least-cost under Commission staff's base case assumptions (see chapter 5). The economic viability of the WCCF is lessened when load growth is more limited. It is also lessened under high fuel cost scenarios.

Merchant power plants

As an alternative to the construction of the WCCF, MGE could rely on electric generation from an independent power producer (IPP) not affiliated with the utility or any of its affiliates. Such an alternative would require an IPP to construct a wholesale merchant power plant or sell electricity from one that is already operating and has available capacity for sale. MGE has not fully explored this option in terms of feasibility and cost effectiveness using a contemporaneous Request for Proposal. Instead it has used costs during modeling for a hypothetical IPP contract that resemble those of two recently signed power purchase agreements that the Commission has found reasonable during the utility's last rate proceeding. Commission staff has compared the costs under the two IPP contracts with those put forth for the hypothetical IPP purchase and has determined that the hypothetical IPP

¹ PSC docket 05-CE-130, in process at the Commission.

costs do resemble those in the signed two IPP agreements. However, there is the concern that the two contracts reflect costs for a shorter five to ten year period than the 30 years under the WCCF facility lease.

Environmental Impact

The proposed project site is located in Sections 15, 16, 21, and 22, Town-7-North, Range-9-East, in the city of Madison, Dane County, Wisconsin, between the Walnut Street Greenhouses and the West Campus Heating Plant on the 500 block of Walnut Street, in Madison. To the north of the proposed site are Herrick Drive and the greenhouses. Existing UW Physical Plant buildings and oak trees lie to the east. The West Campus Heating Plant and Walnut Substation are on the south. The size of the site would be approximately 4.5 acres. It is zoned R-5 Residential. It is owned by the UW and is currently used for agricultural crop research.

Air Quality

MGE has submitted an air pollution control permit application to construct and operate the WCCF using natural gas as the primary fuel in the company's preferred plant configuration at the Walnut Street site.

The project will meet all air quality standards applicable in the state. However, it would consume much of the margin for clean air for some pollutants. Modeling shows that the facility would meet potential standards for PM_{2.5}, which are expected to go into effect in the near future. An air quality mitigation plan developed by MGE, the UW, and other concerned parties should address any concerns related to the air quality impacts of this proposal. Other health risks due to air pollution emissions have been modeled, and are expected to be very small.

Water Quantity and Quality

Process water for the WCCF would most likely be supplied by the Madison Water Utility (MWU), as well as surface water pumped from Lake Mendota. The plan calls for using the lake water primarily in the cooling towers, after suitable treatment, and well water for other plant purposes. This plan would slightly affect the volume of water in Lake Mendota, and contribute to the existing drawdown of groundwater levels in the area.

A mitigation plan for water use calls for pumping water from an existing MWU well near the Nine Springs Wastewater Treatment Plant. This pumpage for WCCF uses would be mitigated by infiltrating water back to the groundwater aquifer at any of a series of possible sites on the west side of the Madison area.

Fisheries and water quality biologists do not expect any substantial adverse impacts on aquatic life in the Yahara Lakes and River system.

Water Loss Mitigation Alternatives

To mitigate or compensate for the impacts of the water loss to the Yahara River watershed due to this project, various individuals and organizations have proposed a number of alternatives. A multi-agency effort has begun in response to organizational work by Dane County to address these issues. Any of these alternatives affecting water loss would be subject to applicable DNR permit approval conditions:

- Use of MMSD effluent for WCCF cooling
- Potential permit conditions to limit water loss through the WCCF
- Groundwater pumping from abandoned Madison Water Utility wells
- Restoration of groundwater resources through infiltration projects
- Lake level management
- Discharging wastewater effluent from a “supertreatment plant” that would treat Nine Springs effluent to approximate the chemistry of Lake Waubesa
- Interim storage of water in Lake Mendota
- Water conservation measures – voluntary, through the city or water utility
- Establishment of a “public rights stage” for the river

MGE, in consultation with the county work groups, has elected to replace the water taken from Lake Mendota by the WCCF during low Yahara River flows with groundwater pumped by the Madison Water Utility (MWU) from a refitted Well #5. Groundwater pumped from Well #5 would be replaced through infiltration projects, established at first at the Hill Farms State Office Buildings, Rennebohn Park, the UW Arboretum, and Wexford Park.

Impacts of Water Supply Facilities

New MWU well and main

A new well installed by the MWU would add to the already significant withdrawals from local groundwater. Construction of the well and the main to carry water to the WCCF would have temporary impacts on vegetation and traffic in the vicinity of Walnut Street and Observatory Drive.

Lake Mendota intake

A new section of the 18-inch pipeline for transporting lake water to the site would run west from behind the UW Social Sciences Building along the Lake Shore Path to a point northwest of the first set of softball diamonds west of Willow Creek. At that point, the pipeline would turn southward, past the ball diamonds, across Observatory Drive, and along the driveway between the Biotron Building and the Walnut Street Greenhouses to the WCCF site. A DNR permit would be needed for the grading project necessary to install the pipeline on the Lake Shore Path. A crossing of Willow Creek by the Lake Shore Path would be done by directional boring.

MMSD effluent pipeline

No detailed design, surveying, or route optimization have been done for this supply option. It is still under consideration by MGE. However, it would involve lining about 3.25 miles of an existing,

abandoned MMSD pipeline from the Nine Springs plant to the corner of West Shore Drive and West Washington Avenue in Madison. West of this point, a new pipeline would be installed in a 700-foot, open-cut trench or directionally-drilled along West Washington Avenue from West Shore Drive to South Brooks Street. In Brooks Street, it would involve about 0.45 miles of open-cut trench installation from Vilas Avenue north to the railroad corridor, and a 1.25-mile trench installation along the railroad corridor from North Brooks Street to the WCCF.

Impacts of Wastewater and Storm Water Discharge

Preliminary examination concludes that there would be little or no environmental impact associated with the storm and waste water discharges from the plant. These discharges are likely to be regulated under general state wastewater permits.

Existing Vegetation

The WCCF would replace the UW Agriculture and Life Sciences College's Herrick Drive field, now used for summer field trials of agronomic plants. Once constructed, power plant operation would not have an appreciable effect on nearby vegetation. Because wastewater would be discharged to the MMSD system and not the creek or the lake, anticipated impacts to aquatic wildlife and vegetation would be minimal. If the WCCF demonstrated compliance with air quality standards, minimal impacts to vegetation and wildlife would be anticipated from the plant's air pollutant emissions.

Land Use

The site is zoned R-5, residential. A large electric generating facility would be a conditional use within the R-5 district. MGE and the city of Madison have agreed, however, that no zoning action would be taken by the city for the WCCF. Their decision is based on Wis. Stat. § 196.491(3)(i), part of the state power plant siting law.

South of the site and the existing Walnut Street heating plant are the railroad, Campus Drive, old University Avenue and the University Heights neighborhood. Several apartment buildings and restaurants are located on University Avenue in that area, along with a car wash and car repair business. The residential area south of University Avenue runs up hill, with about a 50-foot change in elevation, toward Madison West High School and Regent Street. It is a hillside neighborhood of relatively older single-family homes. Local residents report that windows on some of the homes in this area look across the streets and the railroad to the existing heating plant and other university buildings.

The proposed site is located near the western end of the UW campus. The UW Hospital, Veterans Affairs Hospital, Madison West High School, and several daycare facilities are located within a half mile of the site.

Compatibility with UW plans

The Board of Regents of the UW owns the site, and the UW has played a critical role in the planning of the WCCF. According to the UW Campus Master Plan dated December 1996 and updated in

February 2001, the site has been slated for some kind of development since 1996. The Campus Master Plan highlights utility capabilities as an important campus-wide initiative.

Compatibility with Madison plans

Through its cooperation in developing the Madison Climate Protection Plan in 1999, MGE projected that it would add up to three cogeneration projects in the greater Madison area by 2010.

Madison land use in the WCCF area is planned to remain mixed commercial and medium high-density residential use closer to the campus with single-family residences remaining further south to Regent Street. The plant is not expected to have an appreciable impact on those plans.

Effects on Local Services

Police, fire protection, and emergency medical services would be supported as normal through the city, with training shared to familiarize them with the plant and its equipment. School attendance and functions would not be expected to be affected by the WCCF.

Madison Water Utility

The MWU would supply municipal water for domestic uses, fire protection, demineralized water, and as a backup to the other sources when the conditions are warranted. A new municipal well would be required to provide 100 percent reliability for this supply. Considering the capital and operating expenses of the proposed well and water sales to the WCCF at general service rates, there would be little or no impact to MWU ratepayers.

Madison Metropolitan Sewerage District

MMSD would be the repository for the wastewater from the proposed plant. The wastewater discharged from the facility would be routed directly to the UW Lot No. 62 pumping station via a new 8-inch line. MMSD intends to upgrade the interceptor that accepts sanitary sewer flows from the 19-inch force main that would serve the WCCF. Construction of the WCCF might move up the installation date but would not adversely affect MMSD's budget.

Roads and railroads

No additional roads or railroad lines would be required for the facility construction or operation of the plant. The two main access roads to the proposed site, Walnut Street and Observatory Drive, are heavily traveled between 7 a.m. to 9 a.m. and from 4 p.m. to 6 p.m. The impacts to current traffic conditions during these peak hours could be avoided if transport of heavy or oversized loads would take place during off-peak hours. No particular surface work would be required on nearby streets. The primary traffic impact during operation would be from employee vehicles and from oil tank trucks delivering distillate fuel when natural gas cannot be used to fuel the plant. The Wisconsin and Southern rail line may be also used to accommodate heavy equipment deliveries (such as the combustion turbine).

Fogging and Icing

Three sets of cooling towers would be located on top of the power plant at elevations of 61 to 110 feet above facility grade, regardless of the plant configuration on the site. Modeling shows that only the steam condensing cooling towers would potentially create any ground fog. Approximately two hours total of transient ground fog formation could be expected over the course of a year, south of the plant. The area where the fog could form is up hill between University Avenue and Regent Street, centered on Allen Street, just east of Madison West High School.

The model showed no hours of road icing occurrence from any of the cooling tower systems, probably because of the wet-dry technology of the steam condensing cooling system and the transient nature of the infrequent ground fog.

Noise

MGE states that the WCCF is designed to meet a city noise ordinance proposed in 1998 but not yet adopted. The limits would be 65 dBA from 7:00 a.m. to 7:00 p.m. and 62 dBA over night in residential zones, and 75 dBA in commercial or manufacturing zones.

It appears that the noise levels resulting from normal operation of the plant would decrease from 65 dBA at the site boundary to about 50 dBA south of Campus Drive, to about 49 dBA near University Avenue, and to less than 40 dBA at Van Hise Avenue and Madison West High School. These levels are less than the 62 dBA limit required at night by the 1998-proposed city ordinance for residential areas. The levels in the area of the commercial establishments nearby on University Avenue would range from 42 dBA to 63 dBA, all less than the 1998-proposed limit of 75 dBA for commercial districts.

In accordance with the PSC's Noise Assessment Measurement Protocol, the company commissioned an ambient noise level survey at seven locations on and near the site parcel, representing the southern and western sides of the property plus locations farther away on the UW campus and in the city neighborhood to the south past Campus Drive.

The dBA noise estimates from the plant were compared to the background ambient noise measurements to estimate the impact that the generating facility would have on the existing sound environment. The noise measured in dBA at the sample residential receptor locations would increase by about 0 to 2 dBA, depending on the time of day. At the sample industrial receptor locations, noise would increase up to 5 dBA. The highest projected increases would be at the West Campus Heating Plant. It is not expected that any noticeable increase in audible sound would occur in nearby residential neighborhoods during normal full-capacity WCCF operation.

It appears that noise measured in dBC at the sample residential receptor locations would increase by about 0 to 6 dBC, depending on the time of day. At the sample industrial receptor locations, it would increase by about 1 to 10 dBC, again depending on the time of day. The highest projected increases would be at the site by the existing West Campus Heating Plant. Given the measurements and

modeled projections, it is not expected that the WCCF would cause any of the sampled receptors to experience any increase in low-frequency noise or vibration.

Visual Landscape

The WCCF would be much taller than the current uses of the site. The new buildings would be large, creating a new dominant feature in any view that includes the existing West Campus Heating Plant, the WARF building, and the USDA Forest Products Lab, which are the tallest features in the area. Any view that included the existing Walnut Street heating plant and the Walnut Street Greenhouses would include the WCCF in the middle, and it would appear taller than both.

MGE indicates that the WCCF would follow International Dark-Sky Association² guidelines to provide environmentally responsible work area and security lighting. Fixtures would be fully shaded to avoid glare in areas adjacent to the facility.

Archeological Resources

On the plant site and the electric transmission line route, there are no anticipated impacts to archaeological sites. However, the route for the water intake pipeline from Lake Mendota to the WCCF site could adversely affect part of a large listed Woodland period archeological site on campus. To avoid this impact, the WHS has indicated that an archeological survey in the potentially affected area would be warranted, to locate the archeological site, to assess the significance of the portion potentially affected, and to inform the process of creating a plan to address any adverse effect that may result from the pipeline installation. MGE intends to route the pipeline to avoid any adverse impact.

Electric Transmission and Natural Gas Supply Impacts

Because of the WCCF's proximity to the existing Walnut Street Substation, only three short underground cables would be required to connect the facility to the substation. Since these lines would be located on the site property or the substation property, no additional right-of-way is needed. No significant environmental impact is expected from the expansion of the Walnut Street Substation.

Along the proposed route for the East Campus-Walnut Street 69 kV line, there is no woodland, wetland, floodplain, agricultural land, recreational land, residential property, or stream. There are also no known endangered or threatened species and no known or listed historic or archeological properties. In addition, the line would be installed in an existing, unused, underground utilities pipe for the most of its route and require 3,200 feet of new right-of-way (ROW). The new ROW would follow along an existing Wisconsin and Southern Railroad ROW, with a minor portion on the UW-Madison property near the Walnut Street Substation. No significant environmental impacts from the line are expected.

² <http://www.darksky.org/ida/index.html>

The new gas line would be underground and located in the ROW of existing streets. No permanent changes to the visual character of the streets would result from gas line construction. No wetlands, forests, water bodies, agricultural lands, rare species or historic properties would be impacted from construction of the gas line.

Commission Decisions

The Commission has a CPCN application before it for an electric power and steam cogeneration plant that is part of a larger facility including water chilling equipment owned by the UW. Unless granted a time extension by the circuit court, the Commission must issue an order on whether to approve the plant and under what conditions within 180 days after it found that the application was complete. Because Dane County Circuit Judge Stuart A. Schwartz granted an extension of 180 days, the Commission must issue its order by October 20, 2003. If the plant were approved, the Commission would also approve a plant configuration. For whichever configuration is selected, the Commission must decide under what conditions it would be built and operated. The DNR must independently issue an air pollution control construction permit before any plant construction can begin. A water loss approval and other water-related permits are needed before construction of certain elements of the project may begin. The Commission must determine that these DNR permits have been or can be obtained when it decides whether to issue a CPCN.